1898

Manual of Osteopathic Therapeutics

Clifford E. Henry

A MANUAL OF OSTEOPATHIC THERAPEUTICS

BY CLIFFORD E. KEYES

A MANUAL OF

OSTEOPATHIC THERAPEUTICS

—BY—

CLIFFORD E. HENRY, Ph. G., M. D., D. O.

PROF. OF ANATOMY AND OSTEOPATHIC THERAPEUTICS
IN NORTHERN INSTITUTE OF OSTEOPATHY; EX-
PRESIDENT OF THE FACULTY AND PROFESSOR
OF ANATOMY AND OSTEOPATHIC THER-
APEUTICS IN PACIFIC SCHOOL
OF OSTEOPATHY.

PUBLISHED BY
THE AUTHOR
MINNEAPOLIS
1898

To MY WIFE

THIS SMALL WORK IS AFFECTIONATELY DEDICATED AS AN ACKNOWLEDGMENT OF THE ENCOURAGEMENT AND ASSISTANCE EXTENDED IN ITS COMPLETION.

—BY—

THE AUTHOR.

PREFACE.

In presenting this small volume to the public, I have been careful to make it as concise as possible, and yet, at the same time, cover the principal points. In the classification of the osteopathic movements, as first suggested by myself, I feel that I have helped in the advancement of the science. I do not give the technique of the osteopathic movement, therefore the book is not one that anyone can pick up, learn, and then feel competent to go out into practice. I have confined myself to explaining the physiological actions of the movements by illustrating the case in point by a typical case. It would take a volume many times larger than this to consider each disease separately. *It makes no difference what you call the disease, you must recognize the physical condition of your patient, and then understanding the* PHYSIOLOGICAL ACTION *of your movements, use them accordingly.* I have intended this book as a text-book while in college and a reference book when in practice.

CLIFFORD E. HENRY.

CONTENTS

Classification of Movements as to Physiological Action

Abortifacients.
Alteratives.
Anæsthetics.
Aphrodesiacs and Anaphrodesiacs.
Anti-Emetics.
Anti-Pyretics.
Anti-Arthritics.
Anti-Spasmotics.
Bitters, or Gastric Stimulants.
Cardiac Stimulants.
Cardiac Depressants.
Cathartics.
Cholagogues.
Diaphoretics.
Diuretics.
Emetics.
Emmenagogues.
Expectorants.
Hypnotics.
Mydriatics.
Nervous Sedatives.
Nervous Stimulants.
Tonics.
Uterine Stimulants.
Uterine Depressants.
Vaso-Motor Stimulants.
Vaso-Motor Depressant.

Nerve	Reflex
1st Cervical 2d " 3d " 4th "	Back part of Scalp and Neck.
5th " 6th " 7th " 1st Thoracic	Scapular.
2d " 3d " 4th "	Thorax
5th " 6th " 7th "	Epigastric.
8th " 9th " 10th " 11th " 12th " 1st Lumbar	Abdominal.
2d " 3d "	Cremasteric.
4th "	Knee-Joint.
5th " 1st Sacral	Gluteal.
2d " 3d " 4th " 6th "	Back of Thigh, Leg and Foot.
Coccyx	Buttocks.

OSTEOPATHIC THERAPEUTICS.

Introduction.

The Principles of Osteopathy:—Are based upon a thorough knowledge of what are termed the elementary branches,—that is, anatomy and physiology. To understand these thoroughly, the foundation is laid for a line of argument, as to the causes of disease, formed upon a purely mechanical basis.

Disease:—Is a word used to express some departure from the normal. The etymology of the word is very interesting. *Dis*, a noun from the Latin, represents a Roman myth, a name sometimes given to Pluto, the Roman equivalent of the Greek Hades, hence, infernal regions. *Dis*, a prefix, meaning apart, or asunder. *Ease* is defined as a state of the mind or body free from pain or discomfort of any kind. The disease is: *Organic*, when involving any organic change in the affected parts: *Functional*, when the abnormal phenomena are independent of any apparent structural lesion.

Pathology:—Is the study of the morbid conditions which are produced by disease, and explains their origin, cause, history and nature. *Special*

Pathology is the study of the morbid conditions of individual diseases. *General Pathology* is the study of the morbid conditions common to a number of diseases.

Symptomatology:—The branch of pathology, the object of which is the observation and knowledge of the signs and symptoms of disease. Symptoms are divided into *subjective*, or those known only to the patient; *objective*, those which are evident to the examining physician.

Morbid Anatomy:—Is the change which takes place in diseased structure, and is appreciable by the eye, without the use of the microscope.

Histology:—Is the study of the minute anatomy of a healthy body. This is of the greatest importance, to an osteopath, for oftentimes the cause of the disturbance of function will be found to be within the structure of the same organ.

Etiology:—Treats of the cause of disease. The cause, from an osteopathic standpoint, may be summed up as a departure from normal of some tissue or tissues, thereby interfering with the perfect action of the human mechanism. The cause may be external, but affecting an internal organ, as,

for example, contraction of a muscle, from cold, and this, in turn, pressing on an underlying nerve or blood vessel, thereby cutting off the nerve force or the nutrition to an internal organ. Or, it may be of internal origin, and the parts affected be external, as, for example, the dislocation of a bone, pressing on a nerve, going to the periphera. In this way we may have the exciting point some distance from the point of the disease.

Contagious and Infectious Diseases:—Are those due to the deposit of a specific germ in the tissue, but from an osteopathic standpoint there must be a suitable soil for these germs to grow or else they would be destroyed.

The leucocytes are the destroyers of germs, and the blood in perfect condition is able to overcome an ordinary attack of any germ.

Secondary Diseases:—Are those arising secondary to some primary trouble, as, for example, pleurisy, from pneumonia, or uraemic coma, from kidney disease.

Predisposing Causes:—Are causes which tend to give a special liberty or susceptibility to certain diseases. They may be *inherited or acquired.*

Inherited when born of parents who labor with disease, as, for example, a child born of consumptive parents has a greater tendency to become consumptive.

Acquired from age, habits, occupation, sex and race: (*Modified from Hughes.*)

Age:	Children to catarrhal disorders. Young adults, to fevers. Middle age, to heart, kidney, liver and gastric troubles, Old age, general degenerative changes.
Habits.	Nervousness due, to alcoholism. Perverted sexual ideas. General nervous strain, due to nervous disease.
Occupation.	Miners. Cutters. Painters. Printers. Weavers.
Sex.	Women, nervous diseases. Men, rheumatism, pneumonia.
Race.	Negro, phthisis and scrofula. Jews, diabetes and exopthalmic goitre.

The Clinical History:—Is the history of the disease throughout its entire course, including the period of incubation, to the termination.

Period of Incubation:—Is the time elapsing in an infectious or contagious disease from the time the bacilli gain a point of infection and the appearance of the symptoms.

Prodromes:—Are the earliest symptoms recognized, as, for example, the alternating hot and cold spells before an attack of fever.

Termination:—If by a *cure*, the termination is of three forms: (1) lysis, slow return to health; (2) crisis, abrupt termination of disease; (3) metastasis, changing from one location to another.

The acute disease may be followed by secondary processes; that is, when the first disease is substituted by a second, as, for example, the heart trouble which follows rheumatism.

The termination may be *death*. The four forms of death are: (1) anæmia, a lack of quantity or quality of blood; (2) apnœa, non-areation of the blood; (3) asthenia, gradual loss of vital power; (4) coma, a deep sleep, from which they can with difficulty be aroused. The brain is the first organ affected.

Diagnosis:—The naming of a disease implies a perfect understanding of the case. The osteopath must always look for the cause, and until he is able to demonstrate or give a clear reason for naming the disease, he should not consider that he has made a diagnosis.

A diagnosis may be made *direct* when the morbid condition is revealed, or when he is able to demonstrate that which is the cause.

A *differential* diagnosis is made when the exciting point may be in such a position as to be the cause of symptoms common to a number of diseases, and the diagnosis is made by eliminating one from the other.

Diagnosis by *exclusion* is made by proving the absence of all diseases which might give rise to symptoms common with the one under discussion, but this is uncertain, as there is no positive symptom upon which to rely.

Prognosis:—Is the fore-telling the termination of a disease, and should be given with a great amount of caution, as it involves a knowledge only acquired by long experience.

Treatment:—This is the most important point of consideration after the diagnosis has been made

and the disease is believed to be amenable to osteopathic treatment. Treatment does not consist entirely in the use of osteopathic manipulations, but the hygiene and diet must be looked after, for the ultimate end aimed at is to cure, relieve, or prevent disease. Bathing, out-door exercise and proper wearing of the clothing, in some nervous diseases, are the principal means of cure, while in some gastric troubles the simple regulation of the diet, preventing over eating, the eating of improper foods, and at improper hours, will bring about the required result.

The aim of on osteopath is to remove the cause of disease. In some cases this is an impossibility, and, in such cases, the system is put in the best condition possible for relief, as, for example, cardiac disease. This may be of such a nature the osteopath can not cure it, yet improve the circulation to such an extent the patient will live in comparative comfort the rest of his days.

Modes of Action:—There are two methods by which the treatment affects the body, *near* or *direct* or *remote* or *indirect.* In the direct treatment, the effect is on the structures, in the immediate vicinity, as for example, a case of synovitis of the knee,

the treatment would be confined, principally, to the knee and contingent structures.

In the indirect method the treatment is given at one place for correction of a diseased condition in a distant part, as, for example, pressure upon the nerves of the back for pain in the thigh; or, when the action is still more remote from the place of treatment, a stimulation of one of the cerebro-spinal nerves is transmitted to the sympathetic, as, for example, stimulation of Auerbach's and Meissner's flexus is obtained by this method.

Another interpretation of the indirect treatment is the general good health that very often follows a course of treatment. No apparent change being noticed during the course of treatment, but an improvement soon after the treatment ceases—a reflex action, so to speak.

Modes of Administering Treatment:—Without the least possibility of doubt, the best method of administering a treatment is upon the *nude* skin. The fingers have firmer hold. The secret, in touch, is a firm, even, regular touch. The fingers should not glide over the surface, but move the tissue beneath them, and when the patient has the body covered this is sometimes difficult, especially if she

brings a horse blanket wrapper for a treatment gown.

Another objection to having a covering over the body is that very often there are irregularities or eruptions not prominent enough to be distinguished through clothing, but which have a very important bearing on the case in question.

The body should, in no case, be unnecessarily exposed. I have frequently recommended to my female patients that they open the back of the treatmant gown and place buttons on it the same as the front. With this kind of a garment the patient derives all the benefit of treatment on the nude, and has not the unpleasantness of exposure.

Electricity or *hydrotherapy* may be used as a general stimulant along thc spine in a very large, unwieldy patient. The electricity, unless applied by an experienced hand, is very liable to do a great amount of damage. In hydrotherapy the use of the needle spray as a stimulant up and down the spine has been demonstrated to be of decided advantage in cases of beginning locomotor ataxia.

Dosage:—The dosage of osteopathic treatment should be studied as carefully as the regular studies the dose of his drugs. Common sense is as much

in demand in giving an osteopathic treatment as the regular should use in writing a prescription. No one would think of giving a frail, delicate person the same treatment one would give a big, robust person. But a big, robust person can not always take a heavy treatment, and, therefore, the patient must be studied carefully in all cases, and the treatment given accordingly.

In the treatment of chronic cases, give chronic case doses; that is, a treatment about every other day will be sufficient. In acute cases, the effect of your first treatment must be carefully watched and then a treatment given at regular intervals. The medical man knows just how long the effect of the drug he prescribes will last, and prescribes another dose to be administered just as the effects of the former are waning. In osteopathic treatment of acute cases, the same method of administration should be used.

Idiosyncrasies:—Some people are not made like other people, and they have peculiarities that must be respected. As, for example, a case came under the attention of the author who could bear no pressure on the neck. There was no pathological lesion to be detected, but pressure there caused,

immediately, a throbbing headache that ceased immediately the pressure was released. Where a case of this character presents itself for treatment, it would be doing the patient a very grave injustice to not consider it, but treat it as a whim.

Some of the conditions governing these idiosyncrasies are: (1) *climate*, people of warm climates being more frequently the subject of them; (2) *temperament*, people of a nervous temperament; (3) the female *sex;* and (4) the aged.

Indications and Contra-Indications:—The indication for osteopathic treatment is any symptom, or series of symptoms, which we know the treatment will relieve, without, at the same time, causing an evil effect to be felt in other parts of the body. A contra-indication is any co-existing state or tendency which will be made so much worse by the treatment as to forbid its use.

Combination of Movements for Joint Effects:—When an osteopath examines a case and determines the cause, he sould also determine upon a line of treatment. For example, the person comes to the office complaining of headache, and the pain is found to be due to some derangement of the digestive tract. There is no need of giving that patient

a general treatment, putting him through the paces of everything one knows. Give him a *prescription*, and let that prescription consist only of the movements necessary for the cure of the disease. By the joining together of a number of movements, a chain is formed, and the physiological action greatly increased.

Incompatability:—Care must be taken, however, in making up the prescription that one movement does not kill the effects of another. For example, it would be folly to stimulate a nerve at one point and depress it at another, or depress at the point one expected the reflex. An operator could go over a patient, giving him, seemingly, a very thorough treatment, and yet so kill each movement that the patient would not receive any benefit.

CLASSIFICATION OF MOVEMENTS AS TO PHYSIOLOGICAL ACTION.

Abortifacients and Oxytoxics.

The operator should use the greatest of care in inducing a premature labor, not only from a moral standpoint, but with regard to the mother's life.

The treatment here given is intended more for the *aid of child birth at term* than for the induction of premature birth. For the child to leave the uterus, the door must be opened for it or it remains a prisoner.

The clitoris is analogous to the penis of the male and has the same nerve distribution. Passing down on each side of the clitoris are the *genital* branches of the *genito crural* distributed over the labia and the *internal pudic* to dorsum of clitoris. Pressure on each side of this organ causes a stimulation of these nerves and an impulse is sent to the *partuition centre* of the cord situated in the anterior horns of the gray matter of the cord in the lumbar region. Stimulation of the sensory side of these nerves causes a reflex action to take place, the impulse is switched to the motor side and through the

rami communicantes the impulse is transmitted to the sympathetic system. The function of the sympathetic system is to produce peristaltic action, therefore when the *uterine division* of the *hypogastric* plexus is stimulated, a peristaltic wave starts throughout the uterus that first dilates the cervix; then expels whatever body the uterus contains.

Pressure made upon the first and second lumbar nerves after the head is well started through the os, does not inhibit the motor nerves, for the centre is in the anterior roots, as before stated, and there is sufficient stimulation in the hypogastric plexus to expel the child. Pressure here though does prevent the sensory impulses reaching the brain and therefore the labor is not only greatly shortened in time, by the rapid dilation of the os but the pain is lessened to a considerable extent.

If an abortion is desired, the stimulation of the nerves of the clitoris should be about every four hours and the pressure continued from five to ten minutes at a time. This explains why there are so many miscarriages during the first years of marriage, the excessive cohabitation produces too much stimulation of the clitoral nerves.

Alteratives.

An alterative treatment is one which gradually induces a change and restores healthy functions without sensible evacuations. This is the general treatment used in the correction of long standing pathological conditions. For example; a patient presents himself for examination and treatment, and upon examining the skin an eruption is found. No special lesion can be found, but there is something wrong in a number of places. The treatment takes the nature of a *general treatment* to alter the pathological condition and thereby change the morbid condition into a healthy one.

Anaesthetics.

An anæsthetic treatment is one which produces an insensibility or numbness of pain. *Local* anæsthesia is the only method used in osteopathic manipulations. *General* anæsthesia is where the entire body is affected, as the giving of chloroform or ether in surgical operations. *Pressure* upon a nerve causes a desensitization of the area of distribution of that nerve, it is local in that it is confined, but general in that the area effected may be the entire limb or arm.

Aphrodesiacs and Anaphrodesiacs.

Aphrodesiacs are treatments given to increase the sexual power, and an anaphrodesiac is one given to allay sexual excitement. A patient presents himself and gives the history that he is unable to produce an erection, or the erection is very feeble and relaxation takes place very soon, or the case may be that he has a perfect erection but ejaculation takes place immediately upon entrance or before entrance. The penis is made erect by the blood being retained in the sinuses of the corpora cavernosum and corpora spongiosum by the contraction of the erector penis against the pubis. The dorsal nerves of the penis are the affarent nerves of this reflex unless the stimulation originates by an impulse from the brain. The genito crural and internal pudic bring the impulse to the *aphrodesiac centre* in the anterior horns of gray matter of cord in the lumbar region. The efferent nerve is the nervi erigentes causing dilatation of the sinouses and contraction of the erector penis. Therefore in a case in which the erection is imperfect the treatment is stimulation of the upper lumbar and lower dorsal region. In a case of priapism however, anaphrodesiac action is required, therefore the treatment is to desensitize these nerves.

In cases in which the erection is perfect but ejaculation is premature the affarent nerves are the dorsal nerves of penis, and the efferent nerves, the cerebro spinal nerves emerging through the fourth and fifth lumbar intervertebral foramina, fibers of these nerves connecting with the hypo-gastric plexus which sends branches to the vas deferens and vesiculi seminalies. Stimulation of the lumbar region will generally effect a cure but as a rule it takes from three to six months treatment. For undue sexual excitement, the patient should be examined for a hood bound clitoris or irritating growths. Smegma accumulates underneath the hood and as there is no way for it to escape it becomes rancid and causes an irritation and a constant desire for cohabitation. This constant reflex stimulation of the uterus is the cause of many girls being nervous, hysterical or delicate and who would become healthy if the hood could be loosened.

Anti-Emetics.

Anti-emetics are treatments given to prevent nausea and vomiting. Vomiting is the result of some irritation of the gastric nerves, causing a regurgitation to take place. The muscles of the

stomach, assisted by the diaphram and abdominal muscles, expel the food from the stomach and it is ejected by the mouth.

Vomiting is, at times, sympathetic, as in affections of the uterus, kidney, brain, etc., or symptomatic, as in gastritis, peritonitis, etc. The stimulus may be a direct stimulation of the centre of vomiting, in the medulla, by tumor growths, local disease, from the blood, as in fevers, from poisons or drugs. Or the stimulus may be reflex, from the viscera.

The treatment is to desensitize the nerves from the fourth to the sixth thoracic vertebræ. The great splanchnic takes its origin from this area, and helps form the solar plexus. Through rami communicants, it connects with the cerebro-spinal nerves. Therefore, when pressure is made at these points the impulse is inhibited in its course. The best method is to cause the scapula to become prominent by bringing the arm around behind, on the back, then make the pressure under the edge of the scapula. Nausea is commonly termed sick stomach, and yields to the same treatment.

Anti-Pyretics.

A treatment for the lowering of body temperature, either by heat radiation or heat dissipation, is termed an anti-pyretic or *febrifuge*. *Fever is a rise in bodily temperature, characterized by marked tissue change, disordered functions and an increased circulation.* The primary cause of fever is a disturbance of the nervous system, supposed to be those nervous centers adjacent to the corpus striatum, which, by experiments, have been found to control the production and dissipation of heat. This disturbance may be brought about by stimulation of the cerebro-spinal nerves, or through stimulation of the sympathetic system.

To reduce the temperature by heat radiation, the operator holds the vaso-motor nerves in the neck, thereby causing the blood vessels of the body to dilate, and so bleed the body into itself. Taking the blood to the periphera, from the engorged centres, the sweat glands are brought into action. The vaporization of the sweat cools the skin and also the entire body. All physicians look upon a high internal temperature as dangerous, but as soon as they start a gentle sweat the prognosis is good, unless complications arise.

To lower temperature by heat dissipation, hydrotherapy may be called into use. The cold bath is the method par excellent, using the Brandt method. Care should be taken, however, not to chill the patient to the extent that he does not react from the first shock. When he is lowered into the cold water, the blood first rushes from the periphera to the center, then rebounds to the surface with renewed vigor. The nurse should keep up a brisk rubbing all the while he is in the bath. When taken out of the bath, and wrapped in a blanket, there is a pink glow to the skin, showing a good circulation; soon a gentle sweat starts, and the patient drops off to sleep.

Antiarthritics.

A treatment given for the relief of inflammations occuring in joints is termed an antiarthritic. A treatment given to prevent the progress of inflammatory processes is termed an *antiphlogistic*, this one cardinal fact is to be remembered, *it is an impossibility for a perfect circulation and inflammation to exist in the same place, at the same time.* In inflammation there is an engorgement of the blood vessels and the circulation is sluggish. The treat-

ment directly over the inflammatory area should be light but the muscles and tissues of the contingent structures may be thoroughly treated causing the arterial blood to flow freely through the tissues and the venous blood to freely drain them. Dry heat is a remedial measure that is at the present time attracting attention, especially as an antiarthritic.

Antispasmotics.

A treatment given for the relief of spasm is termed an antispasmotic. The spasm may be the periodical spasm of epilepsy or the acute spasm of some acute disease. The treatment depends greatly upon the nature of the disease, but as a rule an attempt should be made to relax the patient. In the acute spasm as for example—colic, inhibit the nerves of the lower dorsal region thereby inhibiting the peristaltic action of the intestines through the inhibitation of the splanchnic, and also lessening the pain. Of course the irritating substance must be removed or else the pains will return.

In hiccough the treatment is to inhibit the phrenic by pressing against it in the neck, fixed expansion of the chest by holding the costal cartilages of the ribs just below the xyphoid cartilage

also acts as an antispasmotic by preventing the spasmotic contractions of the diaphram.

In epilepsy there is a chronic morbid condition to deal with and the majority of cases have some pathological lesion in the generative organs. If no lesion is found here then the cervical vertebræ are apt to be out of line. Wherever the lesion is found treatment must be given for its correction. An old housewife remedy for acute spasm is to place the patient in a hot bath, the warm water relaxing the entire body.

Bitters or Gastric Stimulants.

A treatment given to stimulate the gastro-intestinal mucus membrane without effecting the general system is termed a gastric stimulant. The medical doctor gives a bitter drug, as for example—quassia, that acts by its bitterness alone, the bitter stimulates the glands into action. The osteopath, by his manipulation over the stomach, excites an increased flow of blood to the stomach and thus tones up the walls of the stomach, causing the glands to secrete freely. A bitter is used in cases in which the food does not assimulate but remains for the greater part of it in the alimentary canal unchanged, feeling

like a heavy weight in the pit of the stomach, or else fermentation takes place and the patient bloats. An old German remedy is prescribed by some physicians; each morning before arising roll a heavy cannon ball over the abdomen, this not only stimulates a flow from the mucous membrane but excites a peristalsis of the intestine and a desire for stool. This movement is given generally in combination with several other movements in a *prescription* treatment.

A patient presenting himself for pain in the head or some other part of the body not regarding a *slight* indigestion as sufficient cause to consult a physician. In some cases he has put off seeking relief for so long that the case is very obstinate and will only yield to several months treatment. Care must be used in diagnosing, to differentiate a simple lack of tonicity of the gastric wall, from gastric ulcer, gastric cancer, etc.

Cardiac Nerves.

Accelerator nerves of heart.	From acceler. cent. of med. obl. fibers pass through lateral tract of cord to inf. cerv. gang and first dorsal ganglia, thence to intra cardiac accel. centre.
	From acceler. cent. of med. obl. through vagus to intra cardiac accel. centre.
Inhibitory nerves of heart.	From vaso-inhib. centre of med. obl. through vagus to intra cardiac inhib. centre.
	From cardio-inhib. fibers of vagus from extra cord inhib. centre of med. obl.
	From vaso-motor nerves to arteries and veins.
Cardia motor center of heart.	Fibers from intra cardiac accelerator centre.
	Fibers from intra cardiac inhibitory centre.

Cardiac Stimulants.

A treatment given to increase the heart action is a cardiac stimulant. This is a treatment that the greatest of care must be used in prescribing. If a patient presents himself, whom upon examining, a cardiac murmur is detected and the heart is *compensating* for the valvular difficulty it would be criminal to give him a cardiac stimulant for you would cause the heart to become irregular in its

rhythm and a *rupture* of the compensation would be very liable to take place, but if the heart is weak in its action the patient complains of his legs and arms *going to sleep*, he looks pale and a general indication of poor circulation, then a stimulant to whip the heart into action is required. The heart rhythm is governed by the sympathetic system, most physiologists agreeing that there are three ganglia that control this rhythm. The inferior cervical ganglia is situated low down in the neck and is connected to the sixth and seventh cervicle and first dorsal nerves by rami communicantes, it also has a few fibres from the pneumogastric. It sends branches to the inferior cardiac ganglion which act as accelorator to the heart. By stimulation then of the nerves of the lower portion of the neck, the heart will beat stronger fuller and quicker. The fibres from the pneumogastric will cause the heart to pause just long enough, before each contraction, for the ventricles to be filled and then when contraction takes place a full pulse wave is sent forth. By this double action we quiet a wild fluttering heart; one that when the ear is placed to the chest, sounds like a bird fluttering in a cage, and a feeble acting heart sending out a small watery pulse; the beat becomes regular, full and strong.

Cardiac Depressant.

When called in to see a patient with a heart beating very rapidly, and sending out a full pulse wave at each beat, a treatment to lessen the heart action is required. Stimulation of the pneumogastric, or the superior cervical ganglia, acts as a cardiac depressant. The fibers from these nerves pass to the superior cervical ganglia.

Owing to the fact that the inhibitory nerves of the heart are constantly at work, they have a greater area of distribution. The accelorator nerves are only called into action in an emergency. The passage of the blood over the endothelial lining of the heart sends a reflex stimulus to the central ganglia, and so causes each cardiac cycle.

Many patients present themselves for treatment with heart trouble. Their family physician has discovered a murmur, and, consequently, begins giving digitalis, cactus, or some other heart stimulant. As a consequence, when you find the patient he has a large, irregular heart, the pulse rapid, full and strong. The face is flushed, and he may complain of headaches. The first thing is to stop the drug. The next is, put the patient to bed; make him take *absolute* rest. Then the osteopathic treatment consists in depression of the vaso-motor cen-

tres, in the region of the first, second and third thoracic vertebræ, and holding the vaso-motor centre high in the neck, thereby dilating the blood-vessels of the body, and so take much of the work off of the heart. Stimulation of the pneumo-gastric can be made in the triangle of election. This treatment, given from one to four times a day, combined with the absolute rest, will prove beneficial to any case similar to the one described above.

Cathartics.

A treatment given to produce an ordinary passage of feces is called a cathartic.

When the bowels are blocked by intussusception, bands of adhesion from old cases of inflammation of the peritoneum, etc., of course more rigid measures are to be taken, and in some cases surgical operations must be resorted to. The ordinary case of constipation is due to one of two causes: (1) lack of secretion of mucous; (2) want of parastalsis. These two functions are governed by *Auerbach's plexus*, which distributes filaments to the muscular layer of the entire intestinal canal. From this plexus numerous branches perforate the internal circular muscular layer and unite to form

a gangliated plexus, called *Meissner's plexus*, in the sub-mucous tissue. Auerbach's plexus supplies the muscular coat and regulates the peristaltic action of the bowel. Meissner's plexus determines the calibre of the blood vessels, and, consequently, the secretion of mucous. These plexuses are off of the superior and inferior mesenteric plexus, which is a division of the coelic plexus.

The great splanchnic I have found to have a double action. In some cases treated, constipation always followed a heavy treatment of the dorsal region, and, again, a light treatment caused a desire for stool in a short while after treatmeut. A thorough treatment over the abdomen, though, stimulates a flow of mucous and excites peristalsis. Bile excites peristalsis and secretion of mucous, but that is considered under the head of cholagogues.

When there is a lack of mucous, the feces becomes hard and the intestinal wall loses its moisture. If there is peristalsis, the movement of the hardened feces causes inflammation. As a consequence, the bowel is practically put in a splint.

A treatment given for the expulsion of gas is termed a *carminative.* The treatment is practically the same as that given for constipation. The gas

is passed along by the peristaltic action of the intestine.

The cause of the formation of the gas is an entirely different matter, and must be looked into. It may be due to lack of bile, or some other intestinal juice. An old housewife remedy for the relief of wind colic in babies is to pass a flexible rubber catheter up into the rectum.

An ordinary desire for stool is due to the excitation of the *ano-spinal centre*, situated in the lumbar region of the cord; the affarent fibers being from the hemorrhoidal and inferior mesenteric nerves; the efferent, the pudendal plexus. The distention of the walls of the rectum, causing the reflex to take place. In babies, mothers often slip a soap plug up into the rectum. The soap is an irritant and excites peristalsis.

Cholagogues.

A treatment given for the stimulation of the flow or bile, is termed a cholagogue. The bile is nature's cathartic and antiseptic, on account of its bitterness it stimulates the intestional glands into action, causing a free flow of mucous and also excites peristalsis. Where there is a healthy flow of bile, the

food does not ferment and form gas in the intestines. It also dissolves and emulsifies fats, thereby facilitating its absorbtion. This then explains the fatty diarrhœa in cases of liver diseases where the flow of bile is obstructed. It has been proven by experiment that membranes when moistened with bile greatly facilitate the passage through them of fat. It has also been proven by experiment that if the bile is diverted from the alimentary canal by a biliary fistula, the animal sooner or later dies.

The nerves of the liver are derived from the left pneumogastric and cœliac plexus. Whenever food enters the intestine and a secretion of bile takes place, there is a peristaltic wave passes throughout the liver.

Many women suffer from constipation and also have a diseased condition of the uterus. This inflamed uterus is constantly sending forth impulse along the sympathetic system, owing to its very extensive connection with it. These impulses cause a movement in the liver, nature responds to the calls for a while but soon gets tired and then the liver becomes torpid and congested, it does not respond to food entering the intestine and the woman complains of stomach trouble, constipation, etc. This diseased uterus is also the cause of cardiac irregular-

ities or any other organ connected to it through the sympathetic. If upon examining the patient and a diseased uterus is found, it must be cured to obtain good results with the liver. The stimulation of the liver under the edge of the ribs excites peristalsis in the organ and bile is ejaculated from the bile duct into the intestine; an increased flow of blood is caused also; by the treatment and as a slight congestion is physiological during digestion. This increased flow of blood assists greatly in the production of the bile. A decided congestion of the liver though, is equally as pathological as an anæmic condition, for then the congested vessels press against the biliary ducts preventing the bile from flowing freely.

Diaphoretics.

The secretion of sweat like other secretions is influenced by the nervous system the sweat centres being situated in the anterior horns of the gray matter of the spinal cord and medulla. From these centres nerve fibres arise, which passing down the cord emerge principally with the anterior roots of the third, fourth and fifth cervical nerves to pass with the brachical plexus to the skin of the upper

extremity and with the anterior roots of the lumbar nerves to supply the lower extremity. The sweat centres may be stimulated by a reflex action and inhibited by cold. A treatment given for the stimulation of the flow of sweat, is termed a diaphoretic; and one given for the preventing of sweating an *anti hydrotic.*

The skin is one of the important organs of the body and should be kept as clean on the body as that covering the face and hands. The old Romans knew the importance of the bath and the poorest were not deprived of it. The skin may act as a source of nourishment to the body, as well as aid in throwing off the impurities. Sailors shipwrecked in mid-ocean without fresh water find relief from the thirst by immersion of the body in the sea; and in certain cases where the introduction of food by the mouth is impracticable immersion of the patient in a bath of tepid milk morning and evening maintains life.

Diuretics.

If the flow of urine be stopped in man he will soon die from uræmic coma, but the amount of urine passed in a day varies to a very great extent. If a man is working in the sun drinking large quan-

tities of water, he sweats freely and the urine is less, but if he sweats freely and no more water than usual is drunk the urine becomes scanty and highly colored showing concentration. A person on a severe nervous strain passes water very frequently showing there is a very extensive connection with the sympathetic system. *The amount of urine passed depends upon the amount of blood in the kidney and therefore the secretion of urine is influenced by the vaso-motor nerves.* This can be readily demonstrated by means of the oconometer and oncograph, by which the volume of the kidney in the living animal can be shown to vary with the blood circulating through it; the amount of the latter being regulated by the vasomotor nerves. It has also been demonstrated that to puncture the *fovea* situated on floor of fourth ventricle of brain *causes an increased flow of urine.* In some cases the amount passed in a day is enormous. Then therefore it is proven the so-called kidney diseases are only symptoms—the real disease is situated in the nervous system, or where new tissue formation has taken place in the venous or arterial system. In the treatment the vaso motor nerves are acted upon to cause dilatation or contraction of the blood vessels, as the inferior fovea is situated very close to the vaso motor centre in the

medulla oblongata, there is in all probability a very close connection of these two centres. The vaso motor nerves are found throughout the cord therefore the principal point of stimulation is in the lumbar and inferior dorsal region. The kidney may be palpated anteriorly in some people and be stimulated directly.

All osteopaths should understand urinalysis thoroughly. If a case of kidney trouble presents itself an examination of the urine will tell the story complete and also tell if the case is a curable one. No one would think of attempting to cure a badly degenerated waxy or fatty kidney; he could only paliate the symptoms.

Emetics.

A treatment given to produce vomiting is termed an emetic. As a rule, an emetic is an emergency treatment, as, for example, in the case of poisoning.

As far as I have been able to learn, a successful, quick-acting osteopathic emetic treatment has not been discovered; but a firm pressure upon the epigastric region, especially if the fingers are placed about on the junction of the umbilical and epigastric region, and pressure made upward and back-

ward, excites the solar plexus, and regurgitation takes place. For this reason, a patient must not be treated over the abdomen directly after eating. Patients have been known to faint or become very sick when treated on a full stomach.

This treatment is very successful, however, in cases of indigestion, where the presence of food causes great distress. The food is forced out of the stomach, and then the special treatment may be given for the cure of the diseased condition.

Emmenagogues.

A treatment given for the stimulation of the menstrual flow is termed an emmenagogue.

The physician must use the greatest precaution, or he will be imposed upon and commit an abortion. In some cases, however, the woman complains of a stoppage of the menstrual flow and is innocent of the fact that she is pregnant.

Stoppage of the menstrual flow is due, generally, to taking cold during or just prior to the menstrual flow, and is to be differentiated from *amenorrhea*, which is a condition when the stoppage is continued over a considerable period of time, or has never started. Just prior to menstruation, there is a physiological hyperemia of the uterus.

The hemorrhage results from the hyperæmia being so great that, according to some, rupture of the capillaries of the mucous membrane of the cavity of the body occurs.

The capillary tension immediately preceding the rupture of these vessels is explained by contraction of the muscular fasciculi, including the vessels of supply and return, this contraction affecting the veins more than the arteries, in consequence of the thin walls of the former, and by contraction of the muscular rings surrounding the large uterine veins.

The treatment is to cause a flow of blood to the pelvic region, and contraction of the muscle fibers. To increase the flow of blood to the pelvis, forcible adduction of the thigh, with the patient in the dorsal position. Also, direct the patient to contract the perineum, as in restraining a movement of the bowels. To lie on the back and rise to a sitting posture causes contraction of both the abdominal and perineal muscles. Stimulation is to be made in the lumbar region to cause contraction of the muscular fibers.

An old remedy for suppressed menstruation is to have the patient take a *hot* bath, or a hot foot bath, drink warm drinks, and go to bed, the object being to cause a flow of blood to the pelvis. The

heat causes the capillaries to dilate, and thus cause the hyperemia necessary.

Hypnotics.

Acting upon the theory of the causation of sleep as advanced by Dr. Cappie, the osteopath presents the best possible simple hypnotic, that is, when the patient is not suffering from pain. Dr. Cappie holds that the molecular activity of the cerebral cells is diminished through less blood being supplied to them by the capillaries, and that, consequently, the brain occupies less space. But, inasmuch as the brain case must be full, the veins of the pia mater become proportionately distended, the effect of which is, that although the absolute quantity of blood, and, consequently, the pressure, remains the same, the direction of pressure is modified, being less from within and more on the surface of the brain. The latter, or the alterating direction of the pressure gives rise to sleep.

When pressure is made upon the common carotid, by the osteopathic operator, he must, of a necessity, also make equal pressure upon the internal jugular vein, and thereby bring about the condition in the brain described in the above theory.

This theory is also supported by Dr. Durham, in Guy's Hospital Reports, 3d series, vol. vi, and Dr. Hughlings Jackson, in the Royal London Ophthalmalogical Hospital Reports.

Very frequently in high fevers, the patient lies awake for hours, but upon the operator giving him a treatment he goes to sleep. This is because the operator has depressed the vaso-motor centre, and so bleeds the patient into his own body, taking the blood out of the congested brain.

Mydriatics.

A treatment given to produce a dilatation of the pupil is termed a mydriatic.

The cilio-spinal centre is situated at the origin of the first and second dorsal region, the nerves passing into the sympathetic.

The nerves of the iris are the long ciliary given off from the nasal branch of the opthalmic division of the fifth, and the short ciliary derived from the ciliary ganglion. The fibers derived from the motor root of the ciliary ganglion supply the circular fibers, while those derived from the sympathetic supply the radiating fibers of the iris.

By the experiment of cutting the third nerve, and the pupil dilating, and the cutting of the sympathetic, the pupil contracting, they have determined the power each exercises upon the iris.

The iris is a shutter in the eye, admitting just the amount of light necessary. In some cases, though, as in cataract, the iris must be dilated, and in these cases, theoretically, stimulation of the first and second nerves would produce a dilation of the pupil.

Nervous Stimulants.

A treatment for the general stimulation of the nerves is indicated in any case of nervous depression or lack of tonicity in the body. Probably the best general nervous stimulant is extension of the spine. The spinal cord being part of the central nervous system traction made upon it causes a general excitement of the nervous system. This stretching may be made in several ways—the more common way is for one operator to stand at the head and one at the feet and then both pull. The traction should be made very gradually and when letting up do so gradually, not suddenly. Patients complain very bitterly of sudden relaxation after extension, they say the pain is sharp and stabbing

in character. I would recommend that all osteopaths have a jury mast, in their operating room, by means of this they can extend the spine gradually; keep the patient in the position as long as necessary and then let him down gradually.

A *nerve depressant* is a treatment to quiet an over-excited condition and consists in inhibiting the nerves along the entire length of the vertebræ, and I have found that there is a massage movement that is very successful. Grasp the muscles of the arm, twist around as far as possible, and then push up and jerk down; do the same with the forearm, thigh and leg. This combination will generally quiet a very nervous patient.

Tonics.

A tonic is a *general treatment* to act as a general stimulant to the entire system. An operator can give a perfectly healthy, robust person a *heavy* treatment and he will get off of the operating table a tired man; or else he can give a light treatment to a tired person and he will feel refreshed when he gets off of the table, therefore the *light* treatment is the tonic treatment and is to be given to convalescents and people who complain of lacitudes. Those

who are not really sick but need something to brace them up, or else a tonic may be given when there is a general run down condition of the system, as in a man broken down by business cares, or a woman who has not been able to stand the demands of society. The tonic treatments may be given every day or every other day just as the case demands.

Uterine Tonic.

In some conditions, as, for exampls, *amenorrhœa*, or lack of menstruation, *menorrhagia*, or the loss of an abnormally large amount of menstrual fluid, and *metrorrhagia*, or the passage of blood from the uterus, either at or between the times for the menses, a tonic treatment must be given the uterus.

These diseases may be due to a very large number of conditions, *endometretis* being the principal one. Endometretis is an inflammation of the lining membrane of the uterus. This may be due to a dislocation of the uterus, constipation, etc., causing a congestion of the pelvic veins, or it may be due to septic or infectious processes. Whatever is the cause, if due to dislocation of the uterus, it must first be replaced and then the inflammation treated. The establishment of a perfect circulation will obliterate the inflammation.

To increase the flow of blood to the pelvis, all forms of active exercise may be used, particularly the flexing and extending of the body while in a standing position.

To diminish the flow to the pelvic organs, contraction of the muscles of the back and the abductors of the thigh are principally employed.

Understanding these two principles, the operator can regulate the amount of blood to the uterus.

Amenorrhœa may be congenital. That is, the flow has never been established. In such cases, the uterus may be undeveloped, and it must be stimulated into growth and activity. Stimulation of the clitoris has been found to be an elegant treatment for barrenness. It causes an erection of the uterus by the increased blood supplied, and as barrenness is usually due to an endometretis, the stimulation of the clitoris is also a cure for simple endometretis.

Pulling of the hair over the pubes also acts as a stimulant, as it excites the cutaneous nerves, and, through them, the deeper structures.

In neuralgiac dysmenorrhœa, a tonic treatment at the menstrual period, and between the attacks, will oftentimes effect a cure, but, as a rule, the treatment is directed more to the general system than the uterus, in this disease.

Vaso-Motor Stimulants.

In the treatment of fever the vaso-motor nerves are the ones the osteopath anchors to, placing the major portion of his hope of success on the action of them. In a fever the pulse is high and beady, the object is to slow the heart and get a full pulse wave. The vaso-motor nerves of the head are apparently derived from the superior cervical glanglia but they can be traced by their division and electrical stimulation through the cervical cord of the sympathetic to the anterior roots of the first three dorsal spinal nerves, and thence into the anterior columns of the cord.

The vaso-motor nerves supplying the blood vessels of the upper extremity take their origin in the spinal cord, passing off with the anterior roots of the third, fourth, fifth, sixth and seventh dorsal nerves, and then passing into the thoracic portion of the sympathetic. Some of the vaso-motor nerves of the brachial plexus are derived from the anterior roots of the spinal nerves. The splanchnic nerves are derived from the lower part of the dorsal region of the cord and distributes vaso-motor nerves to the blood vessels of the abdomen, with the lumbar and sacral plexus vaso-motor nerves pass out and are distributed to the lower extremities. The common

centre for the vaso-motor nerves has been located in the medulla oblongata on the floor of the fourth ventricle, just in front of the calamus scriptorius. Stimulation of this centre sends out a general order for all blood vessels to contract. There is a gentle impulse being sent out from this centre all the time during health, to maintain the normal calibre of the blood vessels. On account of the fact that the vaso-motor nerves are distributed along the cord they may be stimulated reflexly at any point along the cord.

Holding of the vaso-motor nerve acts as a *vaso-motor depressant.* When the vaso-motor nerves are cut off from action the blood vessels will of a necessity dialate to their fullest capacity, the vascular tonus is relieved. The pressure of the blood from within overcomes the action of the circular muscles of the blood vessels. In fever the blood vessels are contracted and the heart has hard work forcing the blood through the constricted passage ways and as a consequence the greater part of the blood is confined to the deeper structures causing a congestion of them, or else the heart is pumping too fast, and too great a quantity of blood is being sent to the brain causing coma or deleriúm. When the vaso-motors are depressed the blood vessels

dialate, taking the blood from the congested centres to the capillaries of the periphera; this flood of blood to the skin causes the sweat to start and the evaporation of it cools the body. It is a bleeding of the body into its self.

The dilatation of the blood vessels also has a decidedly beneficial action on the over-acting heart. It is certainly easier to pump blood into a large blood vessel than a constricted one, therefore the strain is taken off of the heart and it settles down into a regularity, taking more time for each beat as it requires more blood to fill the dialated blood vessel. As a consequence we have a gentle perspiratian started, the blood taken from the congested centres, and a full pulse wave. Stimulation of the vaso-motors would be made in just the opposite conditions, where there was lack of vascular tonus, the patient complaining of cold etc.

Some authorities describe a vaso-dialator nerve acting against the vaso-motor or vaso constrictor nerves, but this has not been demonstrated as consisting of a definate system over the body.

I have reprinted two of my articles; one, "Locomotor Ataxia," from the *Boston Osteopath*, Vol. I, No. 4; and "The Coccygeal Gland," from the *Northern Osteopath*, Vol. II, No. 8. I believe these articles are of importance to osteopaths.

Locomotor Ataxia.

In the discussion of this disease from an osteopathic standpoint, we must take into consideration that it is a disease pronounced incurable by the medical fraternity, because there has been a degenerative change in the nerves, forming the spinal cord, and nature can not rebuild this lost tissue. It is true they have failed to cure the disease, but numerous cases are on record that have been cured by osteopathy.

In the research for cause, there is found a history of exposure to cold and damp, excessive fatigue, sexual excess, in fact a succession of shocks or strains on the nervous system. It is found more frequently in men than in women.

Upon examination of the spinal cord, a degenerative change has taken place in the posterior or sensory portion of the cord, and hence the theory that the disease originates in the cord. But it does not originate there. "The lesions of the spinal

cord in tabes occur by segments, each posterior root bringing into the posterior column a fresh contingent of degenerated fibers" (Osler).

From this we see that the origin is external to the cord and is primarily in the peripheral nerve trunks, or the degenerative process ascends to the cord, and this degeneration is started by the injury to the peripheral nerve trunks or ganglia.

It has been clearly demonstrated, in surgery, that a nerve may be cut and new tissue will form between the cut ends, and the function of the nerve may be re-established by the use of continued electric stimulation.

Now, why can not nature re-establish the function of a degenerated segment of a nerve, if the cause of such degeneration is removed, and the nerve is revived into action, and the growth of healthy tissue be stimulated around the nerve? It can be done if the case is taken in time, say in the pre-ataxic stage or the ataxic stage. In the paralytic stage, the lesion has extended over a large area of the cord, but still this method of treatment is the most rational, and has cured some cases in this stage.

Attempts to stimulate the healthy action of the nerves are observed in suspension treatment, advo-

cated by some of the European physicians. Chipault and De la Tourette published a book entitled, "True Elongation of the Spinal Cord and its Application to Locomotor Ataxia." Their methods show some good results, but they begin at the wrong end of the line for treatment. As I have observed the cases treated in the Pacific School and Infirmary of Osteopathy, they not only receive extension of the spine, but stimulation of all the peripheral nerves in the locality from which the origin of the tabes occur, as well as stretching and moving all the muscles of the back, to strengthen them, for in cases of the second stage it will be noticed that these muscles have become soft and useless.

Upon this plan of treatment, cases of the preataxic and ataxic stage will receive decided beneficial results, and in many cases a complete recovery is the result.

Coccygeal Gland.

Dislocations of the vertebra in the cervical, thoracic and lumbar regions, and the nerves involved by such dislocations, are very familiar subjects to osteopaths. They always have a care to look particularly for tender spots along the spine, then feel carefully for dislocations. In some cases they cannot find one and the fertile, imaginative brain begins its work. "Surely," they say, "how can we have such an exquisitely tender spot without a dislocation to expose the nerve," and so they find one "in their brain."

It is strange that osteopaths, who have been drilled on anatomy more thoroughly than any other single branch, should forget or overlook the fact that the coccyx is a part of the vertebral column, and that fifty per cent of the people have dislocated coccyx, due, in some cases, to sitting too much on the back. One who sits down in a rocking chair, far forward in the seat, then leans back and rocks, sits more upon the sacrum than upon the ischium, and thereby shoves the coccyx forward. This is one of the reasons one finds a forward dislocation of the coccyx in women, so often. Men who are engaged in office work suffer the same habit.

Now, this small bit of bone does not amount to much, it seems, but it is of the greatest of importance. Dislocation of this bone may cause innumerable diseases, and, what is more, may cause death.

One case which came under my observation, in consultation with W. J. Hayden, at Redlands, Cal.: A woman was confined to her bed, unable to move her head, and the hands and feet but slightly. Along the spine at no point could she bear the weight of the hand. Very evident that something was decidedly wrong. There was no dislocation of the vertebra in the cervical, thoracic or lumbar regions, but the coccyx was turned in, and at right angles with the sacrum, and twisted. There was the trouble. She gave a history of a fall, and invalidism ever since. Under osteopathic treatment she was deriving great benefit the last I heard of her.

Quoting a case recorded in Stimson's "Treatise on Dislocations," in chapter on Dislocations of the Coccyx, page 396, "the patient, a large, corpulent woman, thirty-six years old, fell astride the back of a chair. She at once suffered severe pain in the coccygeal region, much aggravated by attempts to sit, but she was able to go about for some hours. At last the pain became so severe that she took to

her bed, when she found she could neither move or turn. When seen, the next day, there was so much immobility and stiffness of the body as to suggest tetanus. Besides the severe pain in the coccygeal region, she complained of a painful, tense, dragging sensation, extending up toward the nape, and along the arms to fingers, which felt numb. She could not bear to make the slightest movement. The head was confused, and the intellect somewhat clouded. No unnatural sensation in lower limbs. Urine and feces were passed naturally.

A small swelling was felt on the left side of the fissure of the buttocks which proved to be the coccyx torn away from the sacrum, and carried toward the left ischium. The end of the sacrum from which it had been displaced could be plainly felt. Finger in the rectum showed the exact nature of the displacement still better, and when firm pressure was made downward and to the right against the displaced bone, it suddenly resumed its normal position. The patient declared she immediately felt quite another being, the confusion of the head and painful sensation along the spine and arms disappearing. At the end of the fifth day no inconvenience beyond a slight burning pain near the sacrum remained." In some dislocations forward

there will be pain down the thighs as well as the other symptoms.

Why all this nervous trouble? There is as much as there would be in many lesions of the brain. Luschka, in the British Medical Journal, June 13, 1874, described a small gland situated between the levatores ani and the sphincter ani near the top of the coccyx. It is composed of a plexus of small arteries and veins which are surrounded by layers of granular polygonal cells. The body is invested by connective tissue and has branches from the ganglion impar of the sympathetic system and filaments from the coccygeal nerves of the cerebro-spinal system. No use for this ganglia has ever been determined. Some authors class it as an arterial plexus, some do not even mention it, all treat it as of no consequence. Does it seem reasonable that nature would place a gland of such intricate makeup in the human body without a function? Certainly, to my mind, the extreme prostration and hyperesthesia of the spine, in some dislocations of the coccyx, are due to the pressure or disturbance of this gland. Any pressure as from a full rectum causes a stimulation and vibration of the granular bodies, causing the generation of nerve force and an impulse is sent to the brain. If this pressure is in-

creased or the stimulation is continued at great length there is such a generation of nerve force that the nerve cannot carry it and paralysis sets in, or the nerves become sore and tender to the touch from inflammation.

This I hope will cause osteopaths to look other than in the cervical, thoracic or lumbar regions for the cause of the hypesthetic points.